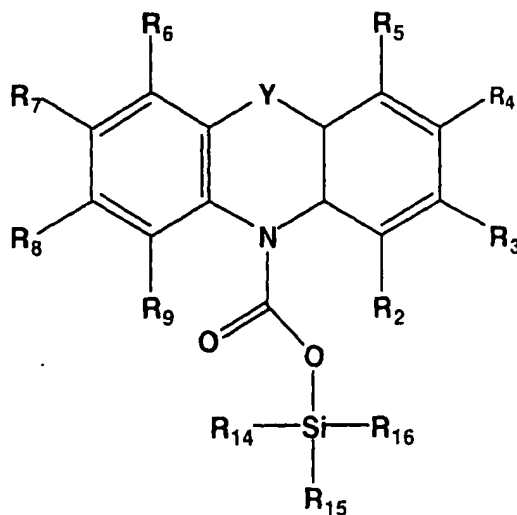


## CLAIMS

What is claimed is:

1. A compound of formula I:

(I)



wherein

Y is O, S, Se, CR<sub>17</sub>R<sub>18</sub>, NR<sub>13</sub>, wherein R<sub>13</sub>, R<sub>17</sub>, R<sub>18</sub> is each independently selected from hydrogen, C<sub>1</sub>-C<sub>3</sub> alkyl and substituted aryl groups and unsubstituted aryl groups;

R<sub>2</sub>, R<sub>5</sub>, R<sub>6</sub>, and R<sub>9</sub> each is independently selected from hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, aryl, nitro, azo and fused aromatic groups;

R<sub>3</sub>, R<sub>4</sub>, R<sub>7</sub>, and R<sub>8</sub> each is independently selected from NR<sub>10</sub>R<sub>11</sub>, OR<sub>12</sub>, hydrogen, alkyl, aryl, azo, and fused aromatic groups; and

R<sub>10</sub>, R<sub>11</sub>, R<sub>12</sub>, R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> each is independently selected from hydrogen, unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl, substituted C<sub>1</sub>-C<sub>6</sub> alkyl, unsubstituted C<sub>1</sub>-C<sub>6</sub> alkoxy, and substituted C<sub>1</sub>-C<sub>6</sub> alkoxy, benzyl or aryl groups.

2. The compound of claim 1, wherein Y is S.
3. The compound of claim 1, wherein R<sub>4</sub> is selected from NR<sub>10</sub>R<sub>11</sub> and OR<sub>12</sub>.
4. The compound of claim 1, wherein R<sub>7</sub> is selected from NR<sub>10</sub>R<sub>11</sub> and OR<sub>12</sub>.
5. The compound of claim 1, wherein Y is S; R<sub>4</sub> and R<sub>7</sub> is NR<sub>10</sub>R<sub>11</sub>; and R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>8</sub>, and R<sub>9</sub> each is independently selected from hydrogen, halogen, alkyl, aryl, nitro, and fused aromatic groups.
6. The compound of claim 5, wherein R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> is each independently selected from hydrogen, unsubstituted C<sub>1</sub>-C<sub>6</sub> alkyl, substituted C<sub>1</sub>-C<sub>6</sub> alkyl, unsubstituted C<sub>1</sub>-C<sub>6</sub> alkoxy, and substituted C<sub>1</sub>-C<sub>6</sub> alkoxy.
7. The compound of claim 6, wherein R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> is each independently selected from methyl, ethyl, *n*-propyl and isopropyl.
8. The compound of claim 7, wherein R<sub>14</sub>, R<sub>15</sub> and R<sub>16</sub> is isopropyl.
9. The compound of claim 8, wherein R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>8</sub>, and R<sub>9</sub> each is hydrogen; R<sub>10</sub> and R<sub>11</sub> each is methyl.
10. The compound of claim 1, wherein Y is O.
11. The compound of claim 10, wherein R<sub>4</sub> is selected from NR<sub>10</sub>R<sub>11</sub> and OR<sub>12</sub>.
12. The compound of claim 10, wherein R<sub>7</sub> is selected from NR<sub>10</sub>R<sub>11</sub> and OR<sub>12</sub>.
13. The compound of claim 10, wherein Y is O; R<sub>4</sub> and R<sub>7</sub> is NR<sub>10</sub>R<sub>11</sub>; and R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>8</sub>, and R<sub>9</sub> each is independently selected from hydrogen, halogen, alkyl, aryl, nitro, and fused aromatic groups.

14. The compound of claim 13, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is each independently selected from hydrogen, unsubstituted  $C_1$ - $C_6$  alkyl, substituted  $C_1$ - $C_6$  alkyl, unsubstituted  $C_1$ - $C_6$  alkoxy, and substituted  $C_1$ - $C_6$  alkoxy.

15. The compound of claim 14, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is each independently selected from methyl, ethyl, *n*-propyl and isopropyl.

16. The compound of claim 15, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is isopropyl.

17. The compound of claim 16, wherein  $R_2$ ,  $R_3$ ,  $R_5$ ,  $R_6$ ,  $R_8$ , and  $R_9$  each is hydrogen;  $R_{10}$  and  $R_{11}$  each is methyl.

18. The compound of claim 1, wherein Y is N.

19. The compound of claim 18, wherein  $R_4$  is selected from  $NR_{10}R_{11}$  and  $OR_{12}$ .

20. The compound of claim 18, wherein  $R_7$  is selected from  $NR_{10}R_{11}$  and  $OR_{12}$ .

21. The compound of claim 18, wherein Y is N;  $R_4$  and  $R_7$  is  $NR_{10}R_{11}$ ; and  $R_2$ ,  $R_3$ ,  $R_5$ ,  $R_6$ ,  $R_8$ , and  $R_9$  each is independently selected from hydrogen, halogen, alkyl, aryl, nitro, and fused aromatic groups.

22. The compound of claim 21, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is each independently selected from hydrogen, unsubstituted  $C_1$ - $C_6$  alkyl, substituted  $C_1$ - $C_6$  alkyl, unsubstituted  $C_1$ - $C_6$  alkoxy, and substituted  $C_1$ - $C_6$  alkoxy.

23. The compound of claim 22, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is each independently selected from methyl, ethyl, *n*-propyl and isopropyl.

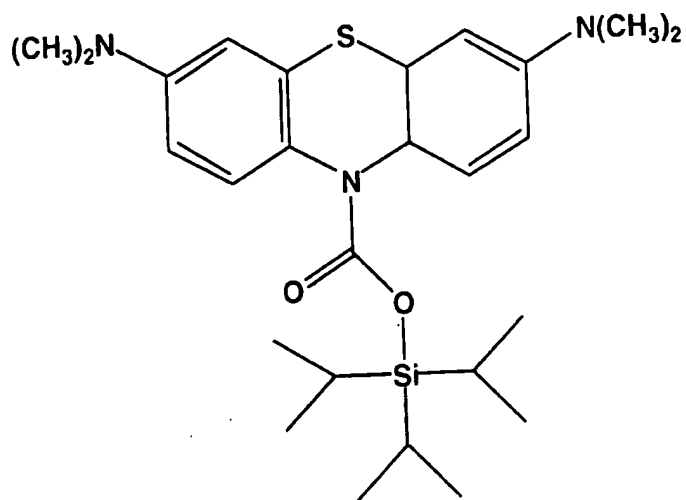
24. The compound of claim 23, wherein  $R_{14}$ ,  $R_{15}$  and  $R_{16}$  is isopropyl.

25. The compound of claim 24, wherein  $R_2$ ,  $R_3$ ,  $R_5$ ,  $R_6$ ,  $R_8$ , and  $R_9$  each is hydrogen;

R<sub>10</sub> and R<sub>11</sub> each is methyl.

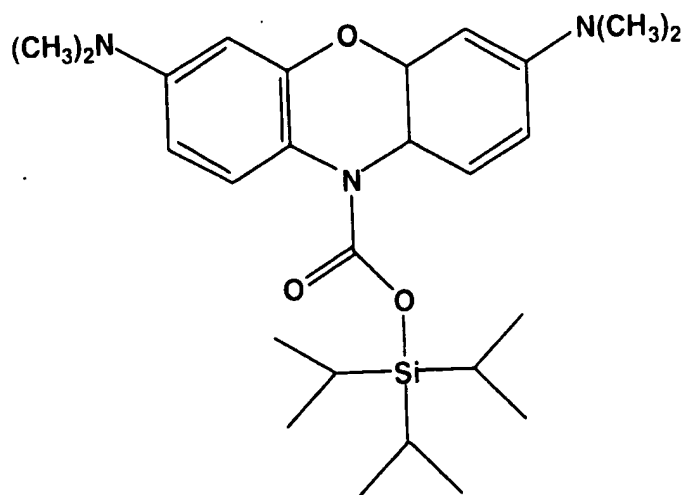
26. A compound of formula II:

(II)



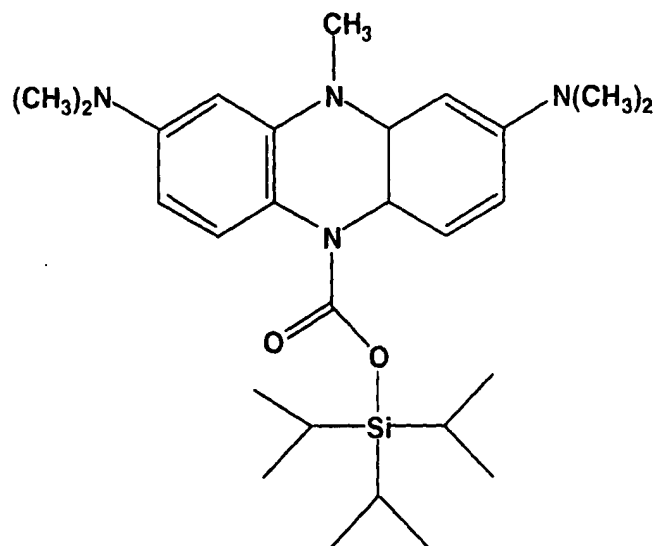
27. A compound of formula III:

(III)



28. A compound of formula IV:

(IV)



29. An optical media comprising:

- a first substrate and a second substrate, wherein at least one of said first substrate and said second substrate has information encoding features;
- a bonding layer between said first and said second substrates;
- wherein said bonding layer transforms from a transparent state to an opaque state and comprises:
- a carrier material, wherein said carrier material comprises at least one of thermoplastic acrylic polymers, polyester resins, epoxy resins, polythiolenes,

ultraviolet cured organic resins, polyurethanes, thermosettable acrylic polymers, alkyds, vinyl resins, and combinations thereof;

a reactive material, wherein said reactive material comprises a reduced form of at least one dye selected from azines, oxazines, thiazines, leuco-azines, quinoneimines, indamines, indophenols, indoanilines, anthraquinones, acridines, diarylmethane, triarylmethane and combinations thereof; and

a photostabilizing material, wherein said photostabilizing material comprises at least one polymeric phenol material.